DOCUMENT RESUME

ED 212 283 IR 009 990

AUTHOR Baaklini, Soumaya
TITLE User Reaction to the Microfiche Catalog in the New York State Library.
PUB DATE 80
NOTE 66p.; Thesis for the Certificate of Advanced Study, SUNY at Albany.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Analysis of Variance; Interaction; *Library Catalogs; Library Surveys; *Microfiche; State Libraries; *Success; *User Satisfaction (Information); Use Studies
IDENTIFIERS *New York State Library; Pearson Product Moment Correlation

ABSTRACT

A survey was administered to users of the New York State Library's microfiche catalog to determine their success and satisfaction in using the catalog and to examine characteristics of successful and satisfied microfiche catalog users. Usable questionnaires were obtained from 280 catalog users. Responses to selected items were weighted and summed to produce a score for each respondent on five variables: (1) catalog usage, (2) library staff assistance, (3) satisfaction with and success in using microfiche readers, (4) success in finding entries, and (5) overall microfiche catalog satisfaction. Personal data were also gathered to assign respondents to appropriate age, sex, education, and occupation groups. Data analysis involved: tabulating responses by item for all groups combined; summarizing comments and suggestions separately for librarians, nonprofessional library workers, and patrons; evaluating by analysis of variance the differences among the various groups on the five variables mentioned above; and computing Pearson correlation coefficients to determine the relationships among the five variables. Findings indicated significant differences among the subgroups in catalog usage and in reader usage, except for male and female respondents, and no significant difference among the subgroups in finding entries. Five appendices, five tables, and 24 references are provided. (RBF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED212283

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

User Reaction to the Microfiche Catalog in the New York State Library

A thesis presented to the Faculty
of the State University of New York
at Albany
in partial fulfillment of the requirements
for the
Certificate of Advanced Study

School of Library and Information Science

Soumaya Baaklini
1980

IR009990

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Soumaya Baaklini

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ACKNOWLEDGMENTS

The author wishes to express her gratitude and appreciation to Dr. Joe Morehead for his assistance with this study and for his support and encouragement as teacher and advisor.

The author is also indebted to the following people:

Ms. Dorothy Butch for her helpful suggestions and comments as committee member and for her role as a teacher of State Library operations.

Dr. Lowell Martin for his guidance in the planning of this study.

Mr. Peter J. Paulson, Director of the State Library, and Mr. Van Judd, Principal Librarian, for their encouragement and support.

The many staff members of the State Library and State Education Department who reviewed the questionnaire and helped with the analysis of the data.

TABLE OF CONTENTS

	Page
List of Tables	v
INTRODUCTION	
The Problem	1
Related Research	3
Purpose of the Study	6
Hypotheses	7
PROCEDURES	
Research Design	10
Questionnaire	11
Sample	11
RESULTS	
Analysis of Variance	13
Correlations	16
Comments and Suggestions	17
CONCLUSION	
Discussion	27
Conclusions	31
REFERENCES	33

APPENDICES PAGE

Appendix A - Microfiche Catalog User Questionnaire 35

Appendix B - Responses to Item 1 through 21 39

Appendix C - Questionnaire Items Related to Process and Outcome Variables 43

Appendix D - Analysis of Variance Tables 46

Appendix E - A Brief Description of the New York State Library Microfiche Catalog 53

LIST OF TABLES

TABLE PAGE

1. Description of the Sample 12

2. Summary of Analyses of Variance 13

3. Pearson Correlation Coefficients 16

4. Comments Provided in Response to Item 27 18

5. Suggestions Provided in Response to Item 28 18

USER REACTION TO THE MICROFICHE CATALOG IN THE NEW YORK STATE LIBRARY

The Problem

A growing number of libraries of all types and sizes are replacing their card catalogs with some kind of computer-generated catalog (Bierman, 1975; Henry, 1978). Although the change is optional with public libraries (Rogers, 1977), research libraries may have no alternative because of the plans of the Library of Congress (Kohl, 1978; Hewitt & Gleim, 1979). These plans include the adoption of the second edition of the Anglo-American Cataloging Rules and the simultaneous automation of its catalog.

Computer-generated catalogs are of two types. One is the on-line catalog, and the other is the computer output microfilm (COM) catalog. Bierman (1975) reports that COM catalogs are more common than on-line and that microfiche is preferred over roll film among those libraries using microfilm catalogs. In comparison to card, book, and on-line catalogs, a COM catalog has many advantages. Cravey (1977) cites these:

1. Ease of maintenance
2. Distributed access
3. Portability
4. Enhanced browsing
5. Reduced space requirements
6. Security
7. Flexibility
8. Cost savings

9. Replacement of deteriorating cards
10. Upgraded quality of catalog
11. Access by mobility-impared individuals

Many of these advantages are also noted by Adler (1976), Bajema (1976), Emmett (1978), and Henry (1978).

The disadvantages of a COM catalog are less numerous. North (1977) cites only the loss of internal control of the catalog: "We are at the mercy of the computer people, who can change schedules or increase prices and upset our budgets" (p.2134). Schwarz (1975) and U.C.L.A. (1975) refer to difficulties with the microform readers and printers. While the U.C.L.A. Working Group was chiefly concerned about maintenance problems, Schwarz believes that both librarians and users must be provided instruction: "Failure to provide adequate instruction maintains the barrier to effective use of the library, unnecessary wear on materials and equipment, and frustration for patrons" (p. 264). A similar view is expressed by Spaulding (1977).

The difficulty of using microform readers is closely related to a potential problem associated with the introduction of COM catalogs: user resistance. User resistance to microforms was a critical issue in the early 1970's (Salmon, 1974). Subsequent improvements in readers and printers, in the quality of the microforms themselves, and in the environment provided for the use of microforms have helped to overcome this resistance. Still, the possibility remains that the many advantages of

a COM catalog will be outweighed by the negative reactions of the catalog users.

In 1976, the New York State Library established a microfiche catalog as an alternative to the card catalog. After two years, the State Library was moved and the card catalog was abandoned. To date, no attempt has been made to study the attitudes of State Library patrons toward this important change. However, a survey of user reactions and suggestions could contribute significantly to the effectiveness of the microfiche catalog in meeting the needs of those served by the State Library.

In addition, a survey of user reactions to the microfiche catalog in the New York State Library could be of value to other libraries that are considering a new catalog. This value would depend upon the extent to which the survey results are generalizable.

Related Research

Several studies of user reactions to microforms were conducted in the late 1960's and early 1970's (Christ, 1972; Lewis, 1970; Rebuldela, 1974; Wooster, 1969). However, because of subsequent technical improvements in microforms, readers, and printers, these studies are of limited value.

A more recent study of user problems with microforms was conducted by Brewster (1976) in the library of North Texas State University. Brewster interviewed 24 users of microforms, following a 29-item inter-

view schedule. Seventeen of the 24 were graduate students. The study revealed some user problems, but most were specific to the North Texas State University Library. Because of the nature and size of the sample, the study did not yield results that can be applied in other library situations.

Studies of user reactions to COM catalogs have been conducted by the University of Toronto Library and the Los Angeles County Public Library System. At the University of Toronto, user reactions were studied in early 1977, six months after the closing of the card catalog, which is described by Blackburn (1979). The results of the survey are summarized by DeBruin (1977). A total of 554 interviews were conducted, following a 15-item interview schedule. About 40 percent of the respondents were undergraduates, 30 percent were library staff, and 20 percent were graduate students.

The Toronto study revealed that no category of user had much difficulty using either the film or fiche catalogs. Although the survey produced some suggestions for improvements, DeBruin concluded that "acceptance of the microcatalogue environment was higher than...first expected" (p. 266).

The Los Angeles study is described in a report by Butler, West & Aveney (1978) and is summarized by Aveney & Ghikas (1979). The data were gathered through interviews conducted in the late summer and fall of 1977. A total of 602 users of the COM catalog were interviewed, following a 25-item interview schedule.

The study revealed that the patrons of the Los Angeles County Public Library prefer the COM catalog to either its book or card alternative. The specialized viewing equipment did not pose a problem to the catalog users, and the introduction of COM appears to have increased the use of the catalog. Despite the extensive amount of data that were gathered, no attempt was made to analyze success or satisfaction separately for various categories of catalog users.

Purpose of the Study

The study described in this paper had a dual purpose. First, it had the purpose of determining the extent to which those who use the New York State Library catalog are successful in using a microfiche catalog and the extent to which they are satisfied with a microfiche catalog. The study was designed to produce information on the particular characteristics of the catalog, if any, that cause user dissatisfaction.

The second purpose was to determine what characteristics of library users are related to satisfaction with a microfiche catalog. The study explored interrelationships among the following variables:

A. Outcome Variables

1. Satisfaction: A measure of the users' overall satisfaction with the microfiche catalog.
2. Success: A measure of the users' success in finding entries.

B. Process Variables

1. Readers: A measure of the users' satisfaction and success with the physical and mechanical aspects of using microfiche readers.
2. Usage: The extent to which the users use the microfiche catalog.
3. Interaction: The extent to which the users have obtained assistance from the library staff.

C. Personal Variables

1. Age
2. Sex
3. Education
4. Occupation

With regard to occupation, the individual's status as a library worker (item 26) was treated as a separate variable labeled "Librarian".

Hypotheses

It was hypothesized that user satisfaction with the microfiche catalog is greater among those who are successful in finding entries, among those who are successful in using the readers, among those who make extensive use of the catalog, and among those who obtain assistance from the library staff. It was further hypothesized that user satisfaction with the microfiche catalog is greater among the younger users, among women, among the more-highly educated, and among library workers.

It was also hypothesized that user success in finding entries is greater among those who are successful in using the readers, among those who make extensive use of the catalog, and among those who obtain assistance from the library staff. Further, it was hypothesized that user success in finding entries is greater among the younger users, among women, among the more-highly educated, and among library workers.

Finally, it was hypothesized that user success in using the readers, the extent of catalog use, and the degree to which assistance is obtained

from the library staff are each greater among the younger users, among women, among the more-highly educated, and among library workers.

In order to make these substantive hypotheses testable, they must be stated as null hypotheses. Therefore, the following 32 null hypotheses were tested:

1. There are no differences among age groups with regard to:
   a. Usage
   b. Interaction
   c. Readers
   d. Success
   e. Satisfaction

2. There is no difference between males and females with regard to:
   a. Usage
   b. Interaction
   c. Readers
   d. Success
   e. Satisfaction

3. There are no differences among educational level groups with regard to:
   a. Usage
   b. Interaction
   c. Readers
   d. Success
   e. Satisfaction

4. There are no differences among occupational groups with regard to:
   a. Usage
   b. Interaction
   c. Readers
   d. Success
   e. Satisfaction

5. There are no differences among professional library workers, nonprofessional library workers, and individuals who do not work in a library with regard to:
   a. Usage
   b. Interaction
   c. Readers
   d. Success
   e. Satisfaction

6. There is no relationship between Success and:
   a. Usage
   b. Interaction
   c. Readers

7. There is no relationship between Satisfaction and:
   a. Usage
   b. Interaction
   c. Readers
   d. Success

PROCEDURES

Research Design

The data were gathered by means of a 28-item questionnaire. Twenty-six of the items required the respondents to answer by checking a box, and the other two items allowed a free response. (See Appendix A).

Individuals using the microfiche catalog in the New York State Library during January and February 1980 were asked to complete a questionnaire. Their responses to each item were summarized to provide information of value primarily to the New York State Library. This accomplished the first of the two purposes of the study. (See Appendix B).

The second purpose was accomplished by giving each respondent a "score" on the five outcome and process variables defined above. The scores were derived by identifying the variable with which each of the first 21 items in the questionnaire is associated and assigning weights to the responses to each of the 21 items. The weighted responses were then summed for each variable. (See Appendix C).

By using items 22 through 26, respondents were assigned to appropriate groups according to age, sex, education, and occupation. Differences among the groups on each of the five outcome and process variables were evaluated by analysis of variance. In addition, correlation coefficients were computed to determine the relationships among each of the outcome and process variables.

Questionnaire

The questionnaire used was prepared specifically for this study. It was reviewed by the Director of the State Library, two principal librarians, two associate librarians, three senior librarians, two assistant librarians, a specialist in research, and a specialist in educational measurement. The questionnaire was revised on the basis of their suggestions and comments. It was subsequently tried-out on 10 catalog users in the State Library, and was found to be clear and unambiguous to this tryout sample.

Sample

During the two-month period established for data collection, questionnaires were completed by 282 users of the State Library's microfiche catalog. The questionnaires were personally handed to and collected from the users, making it possible to follow-up immediately on missing entries. As a result, 280 of the questionnaires contained a response to each item.

Analysis of items 22 through 26 provides a description of the sample in terms of age, sex, education, and occupation. The data are presented in Table 1.

Table 1

Description of the Sample

Characteristic	Number	Percent
Age		
Under 20	16	5.7%
20-29	101	36.1
30-39	77	27.5
40-49	37	13.2
50-59	36	12.9
60 or over	13	4.6
	280	100.0%
Sex		
Male	150	53.6%
Female	130	46.4
	280	100.0%
Education		
Elementary school	2	0.7%
High School	32	11.4
Two-year college	23	8.2
Four-year college	66	23.6
Masters	126	45.0
Doctorate	31	11.1
	280	100.0%
Occupation/Status		
Employed by the New York State Legislature	19	6.8%
Employed by a New York State agency other than the Legislature	163	58.2
Employed elsewhere	29	10.4
Self-employed	16	5.7
Retired	10	3.6
Student	43	15.4
	280	100.0%
Work in a Library		
Yes-professional librarian	51	18.2%
Yes-nonprofessional	23	8.2
No	206	73.6
	280	100.0%

RESULTS

Analysis of Variance

The first 25 null hypotheses, designated 1a through 5e, were tested by one-way analysis of variance, using SPSS (Nie et al., 1975). Table 2 summarizes the results of these analyses; further detail may be found in Appendix D.

Table 2

Summary of Analyses of Variance

Dependent Variable	Independent Variable	Level of Significance
Usage	Age	$p < .001$
	Sex	$p < .01$
	Education	$p < .001$
	Occupation	$p < .001$
	Librarian	$p < .001$
Interaction	Age	NS
	Sex	NS
	Education	NS
	Occupation	$p < .05$
	Librarian	NS
Readers	Age	$p < .05$
	Sex	NS
	Education	$p < .05$
	Occupation	$p < .01$
	Librarian	$p < .001$
Success	Age	NS
	Sex	NS
	Education	NS
	Occupation	NS
	Librarian	NS
Satisfaction	Age	$p < .05$
	Sex	$p < .01$
	Education	NS
	Occupation	NS
	Librarian	NS

Table 2 indicates that eight of the F ratios were significant at the .01 level or beyond, and that four others were significant at the .05 level.

Five of the significant ratios pertain to the extent to which the respondents use the microfiche catalog. Appendix D reveals that the difference in usage among age groups is the result of two factors: (1) less usage by respondents under the age of 20 than by respondents in all other age groups, and (2) greater usage by respondents in their 30's than by those in their 20's. With regard to sex differences, the female respondents use the catalog a significantly greater amount than do the male respondents.

In terms of education levels, respondents with a master's degree make greatest use of the catalog, significantly greater than respondents whose formal education ended after high school or after four years of college.

The significant F ratio for occupations is a result of the heavy usage by State employees, which includes State librarians and Legislative staffers. Those employed elsewhere and students use the catalog the least. Finally, library workers make significantly greater use of the catalog than do library patrons.

Thus, each of the five null hypotheses relating to usage is rejected.

Differences among occupational groups were significant in the extent to which assistance is obtained from the library staff. The greatest amount of assistance is obtained by retired persons, followed by Legislative staffers. Again, the null hypothesis is rejected.

There were four significant ratios pertaining to the use of the microfiche readers. With regard to age, users in their 20's have significantly fewer problems with the readers than users in their 30's and 50's. Four-year college graduates have the fewest problems among the educational groups; those who did not go beyond high school have the most problems.

In terms of occupation, there was a significant difference between those employed by the Legislature and those employed in other State agencies, with the Legislative staffers having the greater degree of success with the microfiche readers. Further, library patrons encounter fewer problems with the readers than do library workers.

Based on these results, the four null hypotheses relating to age, education, occupation and librarian status are rejected.

With respect to satisfaction with the microfiche catalog, significant differences were revealed among age groups and between males and females. Males expressed a significantly greater degree of satisfaction with the catalog than did females. Respondents in their 40's were the most satisfied with the microfiche catalog; those in their 50's were the least satisfied.

Therefore, the two null hypotheses relating satisfaction with the microfiche catalog to age and sex differences are rejected. The remaining 13 null hypotheses are not rejected.

Correlations

The seven null hypotheses, designated 6a through 7c, were tested by computing Pearson product-moment correlation coefficients and determining which of the coefficients were significant. Again SPSS was used, and the results are shown in Table 3.

Table 3

Pearson Correlation Coefficients

	Success	Satisfaction
Usage	.14*	.04
Interaction	-.01	.05
Readers	.14*	.29**
Success		.23**

*p<.05 **p<.01

Table 3 indicates that four of the seven null hypotheses may be rejected. Success in finding entries is significantly related to the extent of catalog usage and to the degree of success one has in using the readers. Satisfaction with the microfiche catalog is significantly related to success with readers and to success in finding entries. The remaining hypotheses are not rejected.

Comments and Suggestions

Questionnaire items 27 and 28 were open ended questions. Item 27 elicited comments and reactions, and item 28 invited suggestions for improving the microfiche catalog.

Comments and suggestions were provided by 128 respondents, which represents 46 percent of the 280 catalog users in the sample. The responses were separated into three categories: (1) those of professional librarians, (2) those of nonprofessional library staff, and (3) those of library patrons. Two-thirds of the professional librarians in the sample provided comments. In comparison only about one-half of the nonprofessional library staff and 40 percent of the patrons responded to items 27 or 28.

Among the library patrons, two-thirds of those who prefer the microfiche catalog, according to item 21, elected not to offer comments or suggestions. In contrast, only about one-third of the professional librarians exhibiting a preference for the microfiche catalog refrained from answering the last items. Thus, taken by themselves, the numbers of comments and suggestions are not indicative of attitudes toward the microfiche catalog.

The comments provided in response to item 27 canbe grouped under seven headings, and the suggestions offered in response to item 28 fall into six categories. Table 4 shows the distribution of comments, and Table 5 shows the distribution of suggestions.

Table 4

Comments Provided in Response to Item 27

Category	Number of Comments			
	Prof. Lib.	Nonprof. Staff	Patrons	Total
1. Equipment	9	5	12	26
2. Microfiche	23	7	37	67
3. Environment	11	2	8	21
4. Library staff	-	-	2	2
5. Dehumanization	-	-	2	2
6. Physical discomfort	2	-	8	10
7. Accessibility	2	-	2	4

Table 5

Suggestions Provided in Response to Item 28

Category	Number of Suggestions			
	Prof. Lib.	Nonprof. Staff	Patrons	Total
1. Equipment	8	6	13	27
2. Microfiche	24	7	38	69
3. Environment	10	2	10	22
4. Library staff	3	1	13	17
5. Accessibility	2	-	2	4
6. Return to card catalog	1	1	15	17

Equipment

Comments

Twenty-six respondents reported problems with the machinery and equipment used in the microfiche system. Their comments included difficulties with the lighting system and with the height of the readers, especially for those who use bifocal glasses. Other mentioned difficulties they experience in using the revolving index because it cannot be locked in one place while using a particular fiche. This was mentioned as a nuisance and time-consuming process. Others indicated difficulties due to dirt accumulating on the screen.

Suggestions

There were suggestions for improved equipment from 27 respondents. The suggestions of the patrons included the need for more readers and cleaner screens. The librarians suggested that the machines be properly maintained and that portable readers be supplied for bifocal readers.

One librarian suggested:

"Carousels are better than binders as holders."

Examples from nonprofessional library staff are:

"Fiche readers should be facing away from lit windows with low back room lighting."

"Purchase more expensive microfiche readers."

"There are not enough fiche readers."

A patron commented:

"The angle of the reader screen makes reading very difficult and painful for someone with bifocals."

Microfiche

Comments

Most of the comments and suggestions clustered around difficulties with the microfiche itself. (See Appendix E). In all, 67 respondents—almost 25 percent of the sample—provided comments under this heading. They included difficulties with the various microfiche in use which lead to confusion and waste of time. Also included were difficulties in assessing the contents of the microfiche and in comprehending all the instructions for the proper utilization of the microfiche. Perhaps the most confusing elements are the various colors of the microfiche (gold, black, blue) and the way each set displays the bibliographic information (call number and filing entries). A few reported that the print on some of the gold microfiche is not legible and strains the eyes.

Suggestions

To rectify the difficulties noted above, a number of suggestions were advanced, especially by the librarians. These included the consolidation of the various microfiche sets, the use of natural language for headings, rearrangement of the bibliographic information so that all appear at the top of the microfiche, uniformity of location of the call numbers and, on some fiche, the inclusion of the first and last complete word. Other suggestions, also from librarians, included the need for the DACS title fiche to be filed alphabetically word-by-word rather than by key-word and for the DACS KWIC index to be provided with more space between entries. The suggestions included the need to update DACS fiche and, as a stop-gap measure, to provide the librarians with a

printout of acquired books that have not been included in the microfiche supplements. Others recommended the need to distinguish between the DACS and Serials microfiche, which are presently under the same blue color.

Some examples of the comments and suggestions of librarians are:

"Too many catalogs are blue."

"Have each catalog a separate color."

"Explain what a KWIC catalog is."

"The gold fiche entries do not have the clarity of the other fiche catalogs because of the filming process."

"The fiche for Serials and DACS are nearly indistinguishable and often interfiled."

Examples from nonprofessional library staff are:

"Clearer instructions on how to use it."

"Provide a cassette for instructions of how to use the microfiche catalog."

"Microfiche is much faster and easier than a card catalog."

"Some method of consolidation of the various catalogs into a more uniform set."

The patrons' suggestions were less in the technical area and more in the utilization area. Most of the patrons want to eliminate the confusion among the various microfiche sets. They want to be sure that their research is exhaustive and up-to-date, and they want clearer and

better instructions on how to use the microfiche and the readers. Thus, patrons want a better labeling of the fiche, a larger fiche number for easier identification, and clearer and more-detailed instructions on how to operate the readers.

Some users of the microfiche catalog have been experiencing confusion regarding the labeling of the microfiche sets in use. For example, the instruction that identifies black fiche as "white" because the print is white and the color of the fiche is black leads some patrons to confuse the fiche in question. The symbols used to indicate the location and the circulation policy leave many patrons in doubt as to the location and the accessibility of the book.

Some examples of patrons' comments are:

"Clearer explanations of the holdings symbols."

"If possible combine the gold and the black fiche."

"Label on cards should be more readable-larger-."

"Photocopies of old card catalog entries often illegible."

"Better printed instructions would make the catalog easier to use."

"A sign indicating the various color coded sections should be placed next to the fiche 'sheets.'"

Environment

With regard to space and the library environment, 21 respondents provided comments and 22 offered suggestions.

Essentially there was little difference among the respondents. Their comments included lack of space for notetaking, noise in the library, and poor location of the readers. For example, left handed patrons find it difficult to take notes. One nonprofessional library worker suggested that the readers be placed in a darker location, avoiding light coming from the windows. One patron felt the noise in the library is distracting.

Some examples of patrons' comments are:

"More space for writing and notetaking."

"I find the telephones and the telephone conversation much too loud for a library setting."

Library Staff, Dehumanization, and Return to the Card Catalog

Although Tables 4 and 5 separate the comments regarding the services of the library staff and feelings of being dehumanized as a result of the introduction of a new library technology, these two comments and the corresponding suggestions are closely related. Only two patrons commented on the inadequacy of staff support services. However, more than 13 patrons, 3 professional librarians, and 1 nonprofessional library worker did provide suggestions.

The comments focused on the need for more staff help. The suggestions dealt extensively with the importance of staff for the operation of the system despite increased mechanization. Comments on the dehumanizing aspects of the catalog stressed the importance of the staff.

Staff provide not only helpful technical information but, more importantly, they provide a congenial human environment for the patrons. Many patrons expressed the need for more staff presence to provide more technical and research support and also to provide a friendly ambiance which acts as an incentive to research. Thus, those who were dissatisfied with the system either recommended the presence of more staff to break the boredom of mechanization and technology or else were adamant that the system should be abolished and recommended a return to the card catalog.

One librarian commented:

"While I prefer a card catalog, I feel the microfiche catalog is necessary in view of the staff time and space it saves."

Examples of patrons' comments are:

"Please bring back the card catalog."

"The card catalog is more convenient, easier to read, easier for notetaking, more people can use it at one time, uses less electricity, saves energy."

"Library staff is always helpful when questions arise."

"It's impersonal; I prefer to deal with library staff."

"Staff is very helpful in putting a new person on the road to independence without making him/her feel like a burden or a nuisance."

Physical Discomfort

Ten respondents described fatigue, boredom, and eye strain as a

result of using the system. Some recommended a return to the card catalog, while others resigned themselves to the fact that the system is here to stay and, in spite of discomfort, find it better than the card catalog. Several recommended a better lighting system and improved equipment.

Examples of patrons' comments are:

"I always get a terrific headache in here! I never get headaches from a card catalogue. I get dizzy when I'm looking for an entry and have great trouble focusing my eyes. My vision is 20-20."

"I notice eye strain after 30 minutes of use."

"Some are too faint to read. I get dizzy seeing them whizz by."

"Hard to see after using it a while."

Accessibility

Under this category, four respondents provided comments and suggestions. The thrust of their comments is that the system is not accessible enough, especially for those who work full-time during the week. Since New York State Library business hours coincide with the working hours of most employees, they find that, unless the microfiche is available in public libraries where the working hours extend to the evenings and the weekends, they will not have adequate access to the system. Their recommendation, therefore, is that a copy of the New York State Library microfiche catalog be deposited in some main public libraries in the area.

One patron offered this suggestion:

"Having it available for use on weekends or evenings—even at another location such as Albany Public Library."

CONCLUSION

Discussion

Earlier it was hypothesized that the relationships among the variables would follow more or less predictable patterns. In some cases, the results of this study lend support to these substantive hypotheses, and in other cases they do not.

It was suggested that the younger users of the microfiche catalog, being more receptive to innovations and adaptable to change, would have higher scores on all of the dependent variables. However, in terms of usage, those under the age of 30 made less use of the catalog than those over 30. A comparison between the age variable and the librarian variable helps to account for this situation, since 72 percent of the library workers are over 30 and, as previously noted, library workers use the catalog to a significantly greater extent than do the patrons.

There are no differences among the age groups in terms of interaction with the staff, but the under 30 users did have fewer problems with the readers. While this may be a function of the adaptability and dexterity of youth, the fact that most of the library workers are over 30 provides a more likely explanation. Support for this view comes from two other findings. The first is that the professional librarians and nonprofessional library workers had significantly more problems with the readers than did the library patrons. The second is a negative correlation, significant at the .01 level, between the usage variable and the readers variable.

Obviously, those who use the readers the most have the greatest likelihood of finding readers that don't work properly, of waiting for a reader, of lacking space for notetaking, and of developing "eyestrain". Thus, if a large proportion of the library workers are in a single subgroup, that subgroup can be expected to have a low score on the reader variable.

Finally, with regard to age, it is interesting to note that age is not clearly related to success in finding entries, but that the under 30 catalog users are among those who are the most satisfied with microfiche.

It was hypothesized that female catalog users would have higher scores than male users on all of the dependent variables. Using the microfiche catalog requires patience and attention to detail, traits often identified with females. However, differences were observed only with respect to usage and satisfaction. Females use the catalog more, which, again, is related to the fact that 78 percent of the library workers are female.

This preponderance of female library employees, who often spend hours in difficult searches for specific entries, may also account for the lower scores of females on the satisfaction variable. At any rate, the hypotheses based on sex stereotyping are not supported by the results of this study.

It was hypothesized that the more highly educated catalog users would have higher scores on the dependent variables. Again, 72 percent of the library employees have a masters or doctorate while only one-half of the patrons have graduate degrees. Consequently, usage of catalog is highest among the more highly educated.

This imbalance in educational attainment may also account for lower scores on the reader variable among the more highly educated. No clear pattern can be observed in the remaining variables—interaction, success, and satisfaction.

Differences in usage, interaction, and readers were noted among occupational groups, and the effect of library employees may once again be at the root of these differences. More than 86 percent of the library employees are in the occupational category coded 5—employed by a State agency other than the Legislature. Almost all, of course, are employed in the State Library. Thus, group 5 has the greatest usage, a moderate degree of interaction with the library staff, and the most problems with the readers. There are no differences among occupational groups on the success and satisfaction variables, although it had been hypothesized that library workers would have the highest scores on all five variables.

The responses of professional librarians and nonprofessional library workers as separate subgroups have been described in the process of reviewing the substantive hypotheses. There is virtually no difference between the pattern of responses for occupational group 5 and for library employees.

Positive relationships between satisfaction and four other variables—usage, interaction, readers and success—were also hypothesized, as were positive relationships between success and usage, interaction, and readers. The data do not support three of these relationships.

First, there was no correlation between scores on the interaction variable and scores on the success and satisfaction variables. This suggests that contact with the library staff has no effect on the end result of an encounter with the microfiche catalog, but there may be other benefits of this interaction, as a few patrons noted in their responses to items 27 and 28. Second, there was no correlation between scores on the usage variable and scores on the satisfaction variable. Apparently, familiarity with the system does not breed affection for the microfiche catalog.

A few responses to individual items are worthy of comment. The first is the fact that almost one-half of the catalog users who completed questionnaires are not aware that there are supplements to some sections of the catalog. There is also a suprisingly large percentage of users who feel that the readers are not bright enough, and more than half feel that there is not enough room for notetaking near the readers.

It is also interesting to note that one-fourth of the catalog users will not ask for help if they fail to find an entry. However, since one-fourth of the respondents were library workers, this reluctance to ask for help cannot readily be attributed to a lack of confidence in the staff.

Finally, there is the response to item 21. Less than one-half of the respondents prefer the microfiche catalog to the card catalog, and almost one-third have the opposite preference. This reaction is somewhat more negative than expected after reading the studies conducted in Toronto and Los Angeles.

Conclusions

This study was designed to accomplish two purposes. The first was to survey those who use the New York State Library's microfiche catalog with regard to the problems they encounter, their success and satisfaction in using the catalog, and their suggestions for improvement. A number of concerns have been surfaced related to the readers, the microfiche, and the catalog environment. Some of the suggestions provided by respondents may well lead to significant improvements in the microfiche catalog.

The second purpose was to examine characteristics of library users as they relate to success and satisfaction with a microfiche catalog. As expected, user satisfaction is highest among those who are successful in using the readers and in finding entries. Quite unexpected was the absence of a relationship between satisfaction and the extent of usage. It appears that the more one uses the microfiche catalog, the more problems one encounters. Consequently, usage and satisfaction are unrelated.

As noted earlier, microfiche catalogs have many advantages over

card and book catalogs. Future technical improvements in readers and printers, as well as improvements in the fiche itself, will make microfiche catalogs even more attractive. In this study, a large majority of the respondents indicated that they found the catalog convenient to use, and there are clearly many steps that libraries can take to increase user satisfaction with a microfiche catalog.

REFERENCES

Adler, P.K. Estimating space requirements for microfilm catalogs and CRT access to computer data bases. Paper presented at annual conference of ALA, Chicago, 1976. (ERIC Document Reproduction Service No. ED 128 001).

Aveney, B., & Ghikas, M.F. Reactions measured: 600 users meet the COM catalog. American Libraries, 1979, 10(2), 82-83.

Bajema, B.D. The new technology and/or uses of old technology. Paper presented at annual conference of ALA, Chicago, 1976. (ERIC Document Reproduction Service No. ED 130 677).

Bierman, K.J. Automated alternatives to card catalogs: The current state of planning and implementation. Journal of Library Automation, 1975, 8(4), 277-298.

Blackburn, R. Two years with a closed catalog. Journal of Academic Librarianship, 1978, 4, 424-429.

Brewster, J.W. User problems with microforms. Denton, Texas: North Texas State University, 1976. (ERIC Document Reproduction Service No. ED 127 919).

Butler, B., West, M.W., & Aveney, B. Library and patron response to the COM catalog: Use and evaluation. Report of a field study of the Los Angeles County Public Library System. Los Altos, Calif.: 1978.

Christ, C.W., Jr. Microfiche: A study of user attitudes and reading habits. Journal of the American Society for Information Science, 1972, 23, 30-35.

Cravey, R., et al. Computer output microfilm (COM): An alternative to card catalogs for SOLINET members. Atlanta, Georgia: 1977. (ERIC Document Reproduction Service No. ED 139 437).

DeBruin, V. Sometimes dirty things are seen on the screen: A mini-evaluation of the COM microcatalogue at the University of Toronto Library. Journal of Academic Librarianship, 1977, 3, 256-266.

Emmett, J. Development of a COM fiche catalogue system at a College of Advanced Education in Queensland Australia. Program, 1978, 12(4), 155-174.

Henry, M.B. Closing the card catalog, or two years before the blast. New Jersey Libraries, 1978, 2(6), 11-14.

Hewitt, J.A. & Gleim, D.E. Adopting AACR2: The case for not closing the catalog. American Libraries, 1979, 10(3), 118-121.

Kohl, D.F. Public service and the disappearing card catalog, RQ, 1978, 17(4), 308-311.

Lewis, W. User's reaction to microfiche: A preliminary study. College and Research Libraries, 1970, 31, 260-268.

Nie, N.H. et al. SPSS: Statistical package for the social sciences (2nd ED.). New York: McGraw-Hill, 1975.

North, J. Card catalog to COM. Library Journal, 1977, 102, 2132-2134.

Rebuldela, H.K. Ultrafiche libraries: A user survey of the Library of American Civilization. Microform Review, 1974, 3, 178-188.

Rogers, J.A. From card to COM in St. Louis County. The UNABASHED Librarian, 1977, 25, 27-29.

Salmon, S.R. User resistance to microforms in the research library. Microform Review, 1974, 3, 194-199.

Schwarz, P. Learning to use microform equipment: A self-instructional approach. Microform Review, 1975, 4, 262-264.

Spaulding, C. Teaching the use of microfilm readers. Microform Review, 1977, 6, 80-81.

U.C.L.A. Working group on public catalogs. Los Angeles, Calif.: 1975. (ERIC Document Reproduction Service No. ED 125 632).

Wooster, H. Microfiche 1969—a user survey. Air Force Office of Scientific Research, Arlington, Va., 1969: (AFOSR 69-184TR, AD 695 049).

Microfiche Catalog User Questionnaire

Several years ago the New York State Library replaced its card catalog with a microfiche catalog, and we would like to know how our library patrons have been affected by this change. Please take a few minutes to complete this questionnaire regarding the microfiche catalog. Thank you for your help.

1. How many times have you used the microfiche catalog?

- ☐ Once
- ☐ Twice
- ☐ 3-5 times
- ☐ 6-10 times
- ☐ More than 10 times

2. When you use the microfiche catalog, for how long do you normally use it?

- ☐ Less than 5 minutes
- ☐ 5-30 minutes
- ☐ 31-60 minutes
- ☐ More than 60 minutes

3. How did you learn to use the microfiche readers?

- ☐ Read written instructions
- ☐ Given instruction by staff
- ☐ Previous knowledge
- ☐ Trial and error

4. Which sections of the microfiche catalog do you use?

- ☐ Gold
- ☐ Black
- ☐ DACS (Documents Access)
- ☐ Serial

5. How did you learn about the various sections of the catalog?

- ☐ Read written instructions
- ☐ Given instruction by staff
- ☐ Trial and error

6. Are you aware that there are supplements to some sections of the microfiche catalog?

- ☐ Yes
- ☐ No

7. How available are the microfiche readers when you need them?

- ☐ Always available
- ☐ Available within 5 minutes
- ☐ Must wait from 5 to 10 minutes
- ☐ Must wait more than 10 minutes

8. Do the readers work properly?

☐ Always ☐ Rarely

☐ Usually ☐ Never

☐ Sometimes

9. Can you focus the reader?

☐ Yes, easily

☐ Yes, with difficulty

☐ No

10. Do you have problems positioning the microfiche in the reader?

☐ Always ☐ Rarely

☐ Frequently ☐ Never

☐ Sometimes

11. Is the viewing screen properly lighted?

☐ Yes ☐ No, not bright enough ☐ No, too bright

12. Is the print large enough?

☐ Yes ☐ No

13. Is the lighting near the readers satisfactory?

☐ Yes ☐ No, not light enough ☐ No, too light

14. Is there enough room for notetaking near the readers?

☐ Yes ☐ No

15. Can you find the fiche you need in the microfiche holder?

☐ Yes, easily ☐ Yes, with difficulty ☐ No

16. Do you find the entries you look for?

☐ Always ☐ Rarely

☐ Usually ☐ Never

☐ Sometimes

17. If you don't find an entry, do you ask for assistance?

☐ Yes ☐ No

18. Can you get assistance when you need it?

- ☐ Always
- ☐ Usually
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

19. Can you find the information needed for requesting materials from the stacks?

- ☐ Yes
- ☐ No

20. How convenient to use do you find the microfiche catalog?

- ☐ Very convenient
- ☐ Convenient
- ☐ Undecided
- ☐ Inconvenient
- ☐ Very inconvenient

21. Which do you prefer to use, a microfiche catalog or a card catalog?

- ☐ Microfiche catalog
- ☐ Card catalog
- ☐ Undecided

22. Age

- ☐ Under 20
- ☐ 20 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 59
- ☐ 60 or over

23. Sex

- ☐ Female
- ☐ Male

24. Formal Education (Check highest level completed.)

- ☐ Doctorate
- ☐ Masters
- ☐ Four-year college
- ☐ Two-year college
- ☐ High School
- ☐ Elementary school

25. Occupation/Status

- ☐ Employed by the New York State Legislature
- ☐ Employed by a New York State agency other than the Legislature
- ☐ Employed elsewhere
- ☐ Self-employed
- ☐ Retired
- ☐ Student

26. Do you work in a library?

- ☐ Yes, as a professional librarian
- ☐ Yes, as a nonprofessional
- ☐ No

27. What other comments or reactions do you have regarding the microfiche catalog?

_____

_____

_____

_____

28. What suggestions do you have for improving the microfiche catalog?

_____

_____

_____

_____

APPENDIX B

Responses to Items 1 through 21

Question	Responses	Number	Percent
1. How many times have you used the microfiche catalog?	Once	46	16.4%
	Twice	21	7.5
	3-5 times	36	12.9
	6-10 times	23	8.2
	More than 10 times	154	55.0
		280	100.0%
2. When you use the microfiche catalog, for how long do you normally use it?	Less than 5 minutes	64	22.8%
	5-30 minutes	170	60.7
	31-60 minutes	38	13.6
	More than 60 minutes	8	2.9
		280	100.0%
3. How did you learn to use the microfiche readers?	Read written instructions	20	7.1%
	Given instructions by staff	186	66.4
	Previous knowledge	38	13.6
	Trial and error	36	12.9
		280	100.0%
4. Which sections of the microfiche catalog do you use?	Gold	234	83.6%
	Black	183	65.4
	DACS	84	30.0
	Serial	146	52.1

Question	Responses	Number	Percent
5. How did you learn about the various sections of the catalog?	Read written instructions	31	11.1%
	Given instruction by staff	194	69.3
	Trial and error	55	19.6
		280	100.0%
6. Are you aware that there are supplements to some sections of the microfiche catalog?	Yes	147	52.5%
	No	133	47.5
		280	100.0%
7. How available are the microfiche readers when you need them?	Always available	151	53.9%
	Available within 5 minutes	114	40.7
	Must wait from 5 to 10 minutes	13	4.7
	Must wait more than 10 minutes	2	0.7
		280	100.0%
8. Do the readers work properly?	Always	146	52.2%
	Usually	132	47.1
	Sometimes	2	0.7
	Rarely	0	0
	Never	0	0
		280	100.0%
9. Can you focus the reader?	Yes, easily	262	93.6%
	Yes, with difficulty	18	6.4
	No	0	0
		280	100.0%
10. Do you have problems positioning the microfiche in the reader?	Always	1	0.4%
	Frequently	12	4.3
	Sometimes	47	16.8
	Rarely	80	28.5
	Never	140	50.0
		280	100.0%

Question	Responses	Number	Percent
11. Is the viewing screen properly lighted?	Yes	216	77.1%
	No, not bright enough	60	21.5
	No, too bright	4	1.4
		280	100.0%
12. Is the print large enough?	Yes	255	91.1%
	No	25	8.9
		280	100.0%
13. Is the lighting near the readers satisfactory?	Yes	238	85.0%
	No, not light enough	18	6.4
	No, too light	24	8.6
		280	100.0%
14. Is there enough room for notetaking near the readers?	Yes	135	48.2%
	No	145	51.8
		280	100.0%
15. Can you find the fiche you need in the microfiche holder?	Yes, easily	203	72.5%
	Yes, with difficulty	73	26.1
	No	4	1.4
		280	100.0%
16. Do you find the entries you look for?	Always	26	9.3%
	Usually	189	67.5
	Sometimes	62	22.1
	Rarely	2	0.7
	Never	1	0.4
		280	100.0%
17. If you don't find an entry, do you ask for assistance?	Yes	208	74.3%
	No	72	25.7
		280	100.0%

Question	Responses	Number	Percent
18. Can you get assistance when you need it?	Always	138	49.3%
	Usually	119	42.5
	Sometimes	12	4.3
	Rarely	0	0
	Never	11	3.9
		280	100.0%
19. Can you find the information needed for requesting material from the stacks?	Yes	254	90.7%
	No	26	9.3
		280	100.0%
20. How convenient to use do you find the microfiche catalog?	Very convenient	75	26.8%
	Convenient	120	42.8
	Undecided	45	16.1
	Inconvenient	28	10.0
	Very inconvenient	12	4.3
		280	100.0%
21. Which do you prefer to use, a microfiche catalog or a card catalog?	Microfiche catalog	127	45.4%
	Undecided	63	22.5
	Card catalog	90	32.1
		280	100.0%

APPENDIX C

Questionnaire Items Related to Process and Outcome Variables

Variable	Question	Response	Weight
Usage	1. How many times have you used the microfiche catalog?	Once	1
		Twice	2
		3-5 times	4
		6-10 times	8
		More than 10 times	12
	2. When you use the microfiche catalog, for how long do you normally use it?	Less than 5 minutes	1
		5-30 minutes	3
		31-60 minutes	7
		More than 60 minutes	12
	4. Which sections of the microfiche catalog do you use?	Gold, Black, DACS, Serial — Count	1-4
	6. Are you aware that there are supplements to some sections of the microfiche catalog?	Yes	2
		No	0
Interaction	3. How did you learn to use the microfiche readers?	Read written instructions	0
		Given instruction by staff	3
		Previous knowledge	0
		Trial and error	0
	5. How did you learn about the various sections of the catalog?	Read written instructions	0
		Given instruction by staff	2
		Trial and error	0

Variable		Question	Response	Weight
Interaction (continued)	17.	If you don't find an entry, do you ask for assistance?	Yes	3
			No	0
	18.	Can you get assistance when you need it?	Always	4
			Usually	3
			Sometimes	2
			Rarely	1
			Never	0
Readers	7.	How available are the microfiche readers when you need them?	Always available	4
			Available within 5 minutes	3
			Must wait from 5 to 10 minutes	2
			Must wait more than 10 minutes	1
	8.	Do the readers work properly?	Always	4
			Usually	3
			Sometimes	2
			Rarely	1
			Never	0
	9.	Can you focus the reader?	Yes, easily	4
			Yes, with difficulty	2
			No	0
	10.	Do you have problems positioning the microfiche in the reader?	Always	0
			Frequently	1
			Sometimes	2
			Rarely	3
			Never	4
	11.	Is the viewing screen properly lighted?	Yes	2
			No, not bright enough	0
			No, too bright	0

Variable	Question	Response	Weight
Readers (continued)	12. Is the print large enough?	Yes	2
		No	0
	13. Is the lighting near the readers satisfactory?	Yes	2
		No, not light enough	0
		No, too light	0
	14. Is there enough room for note-taking near the readers?	Yes	2
		No	0
Success	15. Can you find the fiche you need in the microfiche holder?	Yes, easily	2
		Yes, with difficulty	1
		No	0
	16. Do you find the entries you look for?	Always	4
		Usually	3
		Sometimes	2
		Rarely	1
		Never	0
	19. Can you find the information needed for requesting materials from the stacks?	Yes	4
		No	0
Satisfaction	20. How convenient to use do you find the microfiche catalog?	Very convenient	4
		Convenient	3
		Undecided	2
		Inconvenient	1
		Very inconvenient	0
	21. Which do you prefer to use, a microfiche catalog or a card catalog?	Microfiche catalog	4
		Undecided	2
		Card Catalog	0

APPENDIX D

Analysis of Variance Tables

Each table showing the results of the analysis of variance for more than two groups is followed by the results of the Tukey procedure for testing all possible pairs of group means. The difference in the means of any two groups in a subset is not significant at the .05 level. Groups are identified by the code numbers shown below.

Variable	Group	No.
Age	60 or over	6
	50-59	5
	40-49	4
	30-39	3
	20-29	2
	Under 20	1
Education	Doctorate	6
	Masters	5
	Four-year college	4
	Two-year college	3
	High school	2
	Elementary school	1
Occupation	Employed by N.Y.S. Legislature	6
	Employed by another N.Y.S. agency	5
	Employed elsewhere	4
	Self-employed	3
	Retired	2
	Student	1
Librarian	Professional librarian	3
	Nonprofessional library worker	2
	Not working in a library	1

APPENDIX D

Analysis of Variance Tables

1. Usage by Age

Source	df	MS	F	p
Between Groups	5	253.56	7.336	.001
Within Groups	274	34.56		

Subset 1 Group	1				
Mean	7.75				
Subset 2 Group	2	4	6	5	
Mean	13.99	14.05	14.62	16.22	
Subset 3 Group	4	6	5	3	
Mean	14.05	14.62	16.22	16.82	

2. Interaction by Age

Source	df	MS	F	p
Between Groups	5	5.01	0.516	.764
Within Groups	274	9.70		

Group	6	4	1	3	2	5
Mean	8.46	8.51	8.69	8.75	9.17	9.36

3. Readers by Age

Source	df	MS	F	p
Between Groups	5	23.08	2.748	.019
Within Groups	274	8.40		

Subset 1 Group	5	3	6	4	1
Mean	19.28	19.61	19.62	20.05	20.19
Subset 2 Group	6	4	1	2	
Mean	19.62	20.05	20.19	20.93	

4. Success by Age

Source	df	MS	F	p
Between Groups	5	3.94	1.514	.186
Within Groups	274	2.60		

Group	5	2	1	3	4	6
Mean	7.78	8.01	8.06	8.36	8.43	8.85

5. Satisfaction by Age

Source	df	MS	F	p
Between Groups	5	18.42	2.938	.013
Within Groups	274	6.27		

Group	5	3	6	2	1	4
Mean	3.89	4.65	4.77	5.48	5.50	5.54

6. Usage by Sex

Source	df	MS	F	p
Between Groups	1	282.87	7.521	.006
Within Groups	278	37.61		

7. Interaction by Sex

Source	df	MS	F	p
Between Groups	1	10.33	1.074	.301
Within Groups	278	9.62		

8. Readers by Sex

Source	df	MS	F	p
Between Groups	1	21.46	2.490	.116
Within Groups	278	8.61		

9. Success by Sex

Source	df	MS	F	p
Between Groups	1	0.07	0.028	.867
Within Groups	278	2.63		

10. Satisfaction by Sex

Source	df	MS	F	p
Between Groups	1	53.06	8.396	.004
Within Groups	278	6.32		

11. Usage by Education

Source	df	MS	F	p
Between Groups	5	233.28	6.678	.000
Within Groups	274	34.93		

Subset 1 Group	2	4	1	3	6
Mean	11.91	12.42	12.50	13.74	15.23
Subset 2 Group	1	3	6	5	
Mean	12.50	13.74	15.23	16.76	

12. Interaction by Education

Source	df	MS	F	p
Between Groups	5	13.34	1.397	.226
Within Groups	274	9.55		

Group	3	5	2	4	6	1
Mean	8.17	8.60	8.88	9.52	9.61	10.00

13. Readers by Education

Source	df	MS	F	p
Between Groups	5	20.07	2.374	.039
Within Groups	274	8.45		

Group	2	5	6	3	1	4
Mean	19.38	19.79	20.06	20.30	21.00	21.12

14. Success by Education

Source	df	MS	F	p
Between Groups	5	2.31	0.880	.495
Within Groups	274	2.63		

Group	1	2	4	6	5	3
Mean	7.50	7.78	8.05	8.10	8.33	8.43

15. Satisfaction by Education

Source	df	MS	F	p
Between Groups	5	9.49	1.475	.198
Within Groups	274	6.43		

Group	5	6	2	4	3	1
Mean	4.64	4.97	4.97	5.55	5.65	6.00

16. Usage by Occupation

Source		df	MS	F	p
Between Groups		5	419.04	13.284	.000
Within Groups		274	31.54		
Subset 1 Group	1	4	2	3	
Mean	9.86	11.45	12.30	13.50	
Subset 2 Group	4	2	3	6	
Mean	11.45	12.30	13.50	16.11	
Subset 3 Group	2	3	6	5	
Mean	12.30	13.50	16.11	16.72	

17. Interaction by Occupation

Source		df	MS	F	p
Between Groups		5	27.92	3.007	.012
Within Groups		274	9.29		
Group	4	1	5	3	6	2
Mean	8.45	8.47	8.73	9.75	10.47	11.40

18. Readers by Occupation

Source		df	MS	F	p
Between Groups		5	26.45	3.172	.008
Within Groups		274	8.34		
Subset 1 Group	5	2	3	4	1
Mean	19.63	19.90	20.31	20.76	20.91
Subset 2 Group	2	3	4	1	6
Mean	19.90	20.31	20.76	20.91	21.79

19. Success by Occupation

Source		df	MS	F	p
Between Groups		5	0.76	0.285	.921
Within Groups		274	2.66		
Group	3	2	4	6	1	5
Mean	7.88	7.90	8.07	8.11	8.14	8.26

20. Satisfaction by Occupation

Source	df	MS	F	p
Between Groups	5	5.94	0.915	.472
Within Groups	274	6.50		

Group	2	5	6	1	4	3
Mean	4.20	4.83	5.26	5.30	5.45	5.69

21. Usage by Librarian

Source	df	MS	F	p
Between Groups	2	963.23	30.279	.000
Within Groups	277	31.81		

Subset 1 Group	1		
Mean	13.16		
Subset 2 Group	2	3	
Mean	18.78	19.25	

22. Interaction by Librarian

Source	df	MS	F	p
Between Groups	2	24.15	2.538	.081
Within Groups	277	9.51		

Group	3	2	1
Mean	8.06	8.96	9.15

23. Readers by Librarian

Source	df	MS	F	p
Between Groups	2	78.01	9.558	.000
Within Groups	277	8.16		

Subset 1 Group	3	2	
Mean	18.84	19.00	
Subset 2 Group	1		
Mean	20.58		

24. Success by Librarian

Source	df	MS	F	p
Between Groups	2	5.13	1.968	.142
Within Groups	277	2.61		

Group	1	3	2
Mean	8.06	8.43	8.61

25. Satisfaction by Librarian

Source	df	MS	F	p
Between Groups	2	3.68	0.566	.568
Within Groups	277	6.51		

Group	3	1	2
Mean	4.71	5.07	5.30

APPENDIX E

A Brief Description of the New York State Library Microfiche Catalog

Gold Fiche

The gold fiche includes books, magazines, and government publications cataloged through 1975. It was prepared by filming the card catalog, and it is referred to as a retrospective catalog.

Black Fiche

The black fiche includes the monographs cataloged after 1975, regardless of date of publication. For example, if a book was ordered in 1976 and the date of the publication was 1970, the book would be included in the black fiche. There is a three-year overlap (1973-1975) between the gold fiche and the black fiche.

The black fiche is computer output microfilm (COM). Every entry on the black fiche is already cataloged on OCLC. The black fiche is also known as white fiche, because the print is in white.

DACS Fiche

DACS stands for Document Access System. It contains title records of uncataloged monographic documents and a KWIC index of U.S. documents and state documents (other than New York State documents). It is a temporary collection, arranged by date of receipt, with older materials under continual review for cataloging, vertical filing, or discard. The fiche is blue.

Serial Fiche

The serial fiche contains records for all serials currently received in the New York State Library. Like the DACS fiche, it is blue.